

zamindar collects rents from his ryots and pays to the superior holder, or the Crown, living on the difference. Singhalese villagers may do suit and service either to a feudal chieftain or a Buddhist monastery, much as in England the fief might have been held either by a fighting baron or a praying abbot. It is interesting to find in Ceylon the notion that the existing tenure of land comes from the king having granted it subject to service, whereas its real history seems just the opposite, that the village-community came first, which the sovereign made himself paramount over and levied land-tax from. This reminds us of the theory of English law, that a cottager pastures his donkey on the common by sufferance of the lord of the manor, whose waste it is; the fact being that the peasant is exercising a relic of his old village-rights which has escaped the usurpation of the feudal system, and outlived it.

Though the village-community is much broken down in the districts so well described by Sir John Phear, it still shows the old framework in the division of the tilled land in allotments to each ryot, and the equitable settlement of rights and duties by the *mandal* or headman and his *panchayat* or village-council, which is one of the most admirable features of the ancient patriarchal system. But on the whole the village commune here shows practical results by no means admirable, and the husbandman's life on the roadless mud-flats of Bengal, minutely drawn by the author in all its details of dreary poverty and ignorance and hatred of improvement, is about as depressing a social picture as can be met with.

EDWARD B. TYLOR

NILE GLEANINGS

Nile Gleanings. By Villiers Stuart of Dromana, M.P. (London: John Murray, 1879.)

THE land of Egypt has of late caused the issue of a multitude of books, and that in consequence of the increased knowledge which half a century of Egyptian research has produced. Classical authorities no longer avail the traveller; he requires translations from the original hieroglyphic inscriptions, an insight into the discovery of a new world of antiquity and an acquaintance with the recent excavations which have revealed to the eye of the traveller an unveiled city of the dead. Scriptural texts alone garnished the older voyages. Above all the accomplished traveller should be acquainted with the various sciences which enable him to detect what is new or salient in the country that he visits, and its development, political institutions, progress, or decay should be seen at a glance even if it demands pages to describe them. The grand Egyptian tour is however a promenade of the land of monuments. Mr. Villiers Stuart's "Nile Gleanings" follow the usual track, and offer to the archaeologist, besides the usual discussions on art, hieroglyphs, and language, and an occasional notice on the fauna and flora of Egypt, several new facts of archaeological interest. At the description of Meidoum, the period of which is now known to be that of Senofrou, the tomb of Nofre Maat, with its strange figures inlaid with incrustations of red ochre, is new and interesting for its peculiar art and its remote age of the third dynasty; nor less important is the discovery of the flint flakes, the *albriss* of the old chisels

which sculptured it. Other tombs at the spot were remarkable for their gigantic masonry. These belong indeed to the more recent discoveries, but the traveller paid his respects to the dog mummy pits at Bebe, and the sites of Minieh and Dayr-el-Nakel. Considerable interest attaches to the heretical worshippers of the sun's disk, who flourished about the close of the eighteenth dynasty, and who endeavoured to remove the capital of Egypt from Thebes with "its hundred gates," to Tel-el-Amarna or Psinaula. The idea fashionable amongst Egyptologists has been that Amenophis III. of that line, the king, one of whose statues is the celebrated vocal Memnon, commenced an attempted religious reform and tried to substitute the worship of the sun's disk or orb, the Aten as it is called, for that of the god Amen-Ra, or the hidden sun. To this it is supposed that he was invited by the undue influence of his wife, Tai or Taiti. After his death it is conjectured that he was succeeded by his brother, Amenophis IV., and that this Amenophis IV. was a convert of the most pronounced zeal for the worship of the solar orb or pure Sabæanism. For this purpose, from the Amehpt, or the Peaceful Amen, he changed his name to Khuenaten, the Light or Spirit of the Sun. The chief data for this arrangement of the monarchs of the period of the eighteenth dynasty were the stones used for the construction of the Pylon or gateway of Haremhebi or Horus of the same dynasty, which were found to have been taken from an edifice of the so-called disk worshippers at Thebes, and built with their faces inside the wall, exhibiting the erasure of the name of Amenophis IV. and the substitution of Khuenaten in the cartouches for Amenophis. Some objections indeed might have been taken from the fact that the features of Amenophis and Khuenaten were different, it being of course facile to adopt a new faith, impossible to secure fresh features, even such unenviable ones as those of Khuenaten. Mr. Villiers Stuart discovered a new tomb at Thebes, with Amenophis IV. and his queen on one side of the door and Khuenaten with his queen on the other, both dissimilar in features, arrangement, and condition—one perfect, the other mutilated. As both sovereigns could hardly have occupied the same sepulchre, evidently one of the two appropriated the construction of his predecessor. The theory of Mr. Villiers Stuart is that Khuenaten was a foreigner, which has been always asserted, although it is more difficult to decide to which of the races of mankind he belonged; there are however some reasons to believe that after all he may come from Nubia or the South. The discovery of this tomb is in fact the principal new point of the work, and is the one new and important contribution to the obscure history of the heretical division which took place about the thirteenth century B.C.

The various sites of Esneh, Dendera, Assouan, Philæ, and the Nubian temples are well known, but are described in a light and graceful way, and much old material reproduced in a polished and not pedantic form. Necessarily a great deal is already well known to the student, and no inconsiderable portion to the general public. As to chronology the numerous systems and theories which have been started, amounting in all to above 200, allow any choice which suits best the proclivities of the inquirer. The present work has a new date for Rameses II., and throws his reign back to B.C. 1567, but it is difficult if not

impossible to reconcile a period so exalted with the ceiling of the so-called Memnonium and the date of the heliacal rising of the dog-star on the calendar of Thothmes III. at Elephantine. Every fact connected with the Exodus is a subject of continual dispute, dates, line of march, names of the Pharaohs, place of the House of Bondage whence the Jews swarmed out. The only safe view to take is that the problem is insoluble, and that its resolution should be tied up with the sheaf of paradoxes collected by De Morgan. Mr. Villiers Stuart found the cultivation of sugar prosperous, by means, though, of that apology for slavery "forced labour," and he is indignant at the sufferings of the unhappy fellaheen, as also at the urgent scheme of taxation and the system of baksheesh and official bribery which pervades the modern as extensively as it did the ancient land of bondage; but *corvées*, it appears, are necessary for the payment of Daira bonds, and "the drachm," as in the Roman times, must be wrung out of the hard hands of peasants. While however glancing at the modern state of Egypt the interest of the writer is concentrated on the Egypt of the past, Pharaohs, their queens and their princesses, and a fair popular account is given of Thebes. His weakness is a love of dabbling in etymology, and venturing out of his depth on general questions of comparative philology. Although, for example, an occasional word may resemble its Greek or Latin equivalent, the construction of the hieroglyphic or old Egyptian and the Coptic is totally different from those two classical tongues, the Egyptian having a closer resemblance to the Semitic than the Aryan or Indo-Germanic languages. As to the Etruscan, the few known facts about its construction point to the Turanian or Tartaric family rather than the Egyptian. The origin of the Egyptians is still involved in obscurity, and belongs to the province of conjectural ethnology. More Caucasian in the north and at the earliest period, more Nigritic on the south and at a later epoch, the Egyptians seem historically a mixed race, a fusion of conterminous races of Northern Africa, and Eastern foreigners, and Nigritic blood. The oldest inhabitants still remain a mystery. One theory is that the Egyptian was the primitive man of a vast continent, the last representative being the aboriginal Australian. Amongst other interesting points are visits to the Der-vishes, especially the fortune-tellers, and a description of the ride of the Sheikh of the Saidieh over the bodies of living men, who must have suggested to the apostle, had he seen him, the subject of Death on the Pale Horse. Like the car of Juggernaut, the Sheikh of the Saidieh is said to have been abolished. The ceremony might have been the relic of an old Egyptian one, and Pharaoh riding over his prostrate enemies may have anticipated the Sheikh of the Saidieh. Altogether the work is entertaining and amusing; it is not so dry as a guide or handbook, nor so learned as an Egyptological history such as that of Brugsch-Bey, nor so elaborate as Wilkinson's Manners and Customs, and Topography, or other travels by professed Egyptologists; but its style is light and sparkling, and the principal details of history, mythology, and archæology have been fairly mastered. In the minute details of philology it is weak, but they do not affect the general reader, and are easily set right *en passant* by the expert. They will do no harm to scientific research, and they will amuse and to some extent instruct the public. The plates

are also fairly done, and their colouring renders them more than usually attractive. It is decidedly agreeable to while away the monotony of a voyage down the river of the desert, as the Nile may be justly styled, and to those whose only travels are round their room, it will convey some pleasing impressions of what a visit to Egypt might show them.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

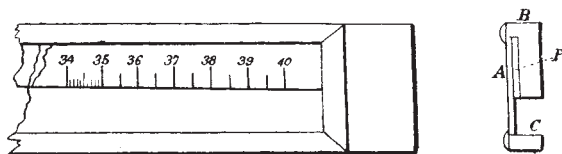
[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Improved Arrangement of Scale for Reflecting Instruments

THE inconvenience resulting from the position of the scale in the ordinary well-known form of Thomson's reflecting galvanometer must have been experienced by all who have had occasion to use it much, and especially by myopic individuals. This I have been able to eliminate very easily, as hereafter described, so that there is no further craning over to see "the spot," or getting in one's "light" in so doing.

The scale is mounted as shown in the sketch, which gives a front view of one end of the scale and a cross-section of the same.

B is a wooden scale-board with longitudinal slot, as shown at C; P is the paper scale, cut so that all the division lines reach the inferior edge; A is a slip of plane glass, finely ground as to its lower half on the side towards C, from one end of the slip to the other; the scale is so placed that the lower end of the division lines just touches the ground part of the glass slip. The image of the slit with a fine wire stretched across it is focussed in the ordinary manner on the ground part of the glass, and will of course be clearly seen by the observer on the opposite side of the scale; as the line and printed divisions are in the same plane, there is no parallax; and a great increase in accuracy of



reading the position of the hair line is obtained, owing to the greater ease of observing that two lines coincide when end on to one another than when superimposed; and further, from the circumstance that the room need not be darkened.

This arrangement has been introduced at the beginning of this year by me in the testing-room of Messrs. Siemens Brothers and Co. at Woolwich, and has been most readily accepted by all my assistants, and I venture to say that any who adopt this arrangement will never return to the previous form.

I may state that I place the lamp and its slit on one side and reflect the beam of light on to the galvanometer by a mirror or total reflection prism, and further by means of two long plane mirrors reduce the actual distance between the galvanometer and scale, so as to have everything close to the observer's hand. The scale I have adopted is divided into half millimetres, and it is perfectly easy to read to a quarter of a division, and with a hand magnifying-glass still further.

This method is of course applicable to any physical instruments which are read by a reflected spot, and as there are no "patent rights" it is placed at the disposal of all.

Charlton

F. JACOB

A Note on Flame-Length

THREE years ago, whilst endeavouring to make use of flame-length as a means of testing the economic values of different qualities of coal-gas by the determination of their specific flame-